REMARKS/ARGUMENTS

In addition to reconsideration of the subject application in light of the amendments and remarks herein, Applicants respectfully request consideration of the Information Disclosure Statement (IDS) filed by Applicants on January 15, 2009.

By this amendment, Claims 7, 8-12, 20-25, 32-39, 41-66, 68-87, and 110-112 are amended. No Claims are canceled, added, or withdrawn. Claims 7-12, 14-39, 41-66, 68-87, and 110-112 are pending in the application. The amendments to the claims as indicated herein do not add any new matter to this application.

Each issue raised in the Office Action mailed December 3, 2008 ("Office Action") is addressed hereinafter.

CLAIM REJECTIONS – 35 U.S.C. § 101

Claims 7-12, 14-39, 41-66, 68-87 and 110-112 are rejected under 35 U.S.C. § 101 because the claims are allegedly directed to non-statutory subject matter. Applicants respectfully traverse.

Claim 7 was rejected on the ground that the method of Claim 7 is neither tied to another statutory class nor transforms underlying subject matter to a different state or thing. The body of Claim 7 has been amended to require that each step of the method of Claim 7 be performed by "a computer system" which is clearly a "machine" or "manufacture" within the meaning of 35 U.S.C. § 101. (Emphasis added). By this amendment, the method of Claim 7 is now tied to one or more statutory machines by an express feature recited in the body of Claim 7. Consequently, it is respectfully submitted that Claim 7 is not directed to non-statutory subject matter because the method of Claim 7 is tied to another statutory class.

Each of Claims 8-12, 14-33, and 110 depend directly from Claim 7 and recite "The machine-implemented method as recited in Claim 7." Therefore, the method of each of Claims 8-12, 14-33, and 110 are also each tied to another statutory class by dependency. Removal of the rejection of Claims 7-12, 14-39, 41-66, 68-87 and 110-112 under 35 U.S.C. § 101 is respectfully requested.

Claims 34-39, 41-60, and 111 were rejected on the ground that they include non-statutory carrier waves within their scope. Present Claims 34-39, 41-60, and 111 have been amended to feature "a volatile or non-volatile machine-readable **storage** medium". Examples of storage media described in the specification include "non-volatile media" and "volatile media", as described in the specification, paragraph [0110], and "a floppy disk, a flexible disk, hard disk, magnetic tape, or any other magnetic medium, a CD-ROM, any other optical medium, punchcards, papertape, any other physical medium with patterns of holes, a RAM, a PROM, and EPROM, a FLASH-EPROM, any other memory chip or cartridge," as described in the specification, paragraph [0111]. All such storage media constitute a statutory "machine" or "manufacture". Present Claims 34-39, 41-60, and 111 exclude non-statutory transmission media such as acoustic waves, carrier waves, light waves and other non-statutory energy. Removal of the rejection of Claims 34-39, 41-60, and 111 under 35 U.S.C. § 101 is respectfully requested.

Claims 61-66, 68-87, and 112 were rejected on the ground of being directed to non-statutory subject matter. Present Claims 61-66, 68-87, and 112 each feature an apparatus that can be embodied in hardware, software, or a combination of hardware and software. Therefore, the apparatus of each of Claims 61-66, 68-87, and 112 is clearly a statutory "machine" or "manufacture". Removal of the rejection of Claims 61-66, 68-87, and 112 under 35 U.S.C. § 101 is respectfully requested.

CLAIM REJECTIONS – 35 U.S.C. § 102

Claims 7-12, 14-39, 41-66, 68-87 and 110-112 are rejected under 35 U.S.C. § 102(e) as allegedly anticipated by *Linden* (US Patent 6,266,649). Applicants respectfully traverse.

To anticipate a claim of the present application, *Linden* must teach or reasonably suggest "each and every element" of the claim "in as complete detail as is contained in the claim." (MPEP § 2131). Further, while the claim may be given its "broadest reasonable interpretation" for the purposes of making an anticipation determination, the interpretation must be "consistent with the specification" and must be "consistent with the interpretation those skilled in the art would reach." (MPEP § 2111).

CLEAR ERROR IN REJECTION OF CLAIM 7

Present Claim 7 recites:

7. A machine-implemented method for estimating how a particular user of a plurality of users would rate a particular item, from a plurality of items, that the particular user has not yet rated, the method comprising the steps of:

a computer system identifying, from the plurality of items, one or more reference items that have ratings similar to ratings of the particular item that the particular user has not yet rated;

a computer system identifying, based on the one or more reference items that have ratings similar to ratings of the particular item that the particular user has not yet rated, one or more other users of the plurality of users that have given ratings to the one or more reference items that are substantially similar to ratings given by the particular user to the one or more reference items;

a computer system generating an estimation of how the particular user would rate the particular item based upon ratings for the particular item given to the particular item by the one or more other users.

In rejecting Claim 7, the Examiner incorrectly equates two approaches for recommending items to a user that are described in *Linden* with the method of Claim 7. The first approach is the collaborative filtering approach described in Background of *Linden's* specification. The second approach is the patented approach described in *Linden* for generating personalized recommendations of items. Neither the collaborative filtering approach nor the patented approach of *Linden* anticipates Claim 7 because neither approach makes a recommendation of a particular item that a particular user has not yet rated based on a group of users that have rated reference items similarly to how the particular user rated the reference items and where the reference items are determined by identifying items that are rated similarly to the particular item the user has not yet rated. Since neither approach makes recommendations in this way, in particular, since neither approach identifies a set of reference items that serves as the basis for identifying a set of similar users, the Examiner's rejection of Claim 7 is based on clear error.

1. **An advantage of the method of Claim 7.**

Applicants have found that one advantage provided by the method of Claim 7 is that it reduces the possibility in certain situations of making a recommendation of an item to a particular user that the particular user would not rate highly. For example, assume the items in question are movies and the particular user is a conscientious objector who likes action movies but does not like war movies. Further assume there are other users who like the same action movies that the particular user likes but that some of those other users also gave high ratings to a particular movie about World War II that the particular user has not yet rated. With conventional approaches, such as the collaborative filtering approach described in *Linden*, there is a high probability that the movie about World War II would be recommended to the particular user on the assumption that the likes and dislikes of the other "similar" users accurately reflect the likes

and dislikes of the particular user. However, as shown with this example, those conventional approaches can often make inappropriate recommendations because those approaches do not take into account, when determining the set of similar users, what items are similarly rated to the recommended item (e.g., what movies are similarly rated to the World War II movie).

In contrast to those conventional approaches, the method of Claim 7 identifies "one or more **reference items** that have ratings similar to ratings of the particular item that the particular user has not yet rated". (Emphasis added). And then the method of Claim 7 identifies "based on the one or more reference items that have ratings similar to ratings of the particular item that the particular user has not yet rated, one or more other users of the plurality of users that have given ratings to the one or more **reference items** that are substantially similar to ratings given by the particular user to the one or more **reference items**". By identifying one or more "similar users" in this manner, in particular, by identifying one or more similar users based on one or more reference items as featured in Claim 7, the method of Claim 7 increases the likelihood that a recommendation made based on what those one or more similar users liked and disliked more accurately reflects what the particular user will like.

Returning to the World War II movie example, instead of simply determining the set of similar users by looking for users who rated movies similar to how the particular user rated those movies, the method of Claim 7 would first identify reference movies that have ratings similar to the ratings of the World War II movie that the particular user has not yet rated. The method of Claim 7 would then identify the set of similar users by identifying users who have given ratings to **the reference movies** that are substantially similar to ratings given by the particular user to **the reference movies**. These similar users are more likely to reflect the movie tastes of the conscientious objector because these similar users are more likely to be users that like movies that the particular user likes but that also don't like war movies.

2. ***Linden's* first approach does not anticipate the method of Claim 7.**

To identify a set of similar users, the "collaborative filtering" approach described in *Linden* at col. 1, lines 42-56 states "the user's profiles is initially compared to the profiles of other users to identify one or more 'similar users.' Items that were rated highly by these similar users (but which have not yet been rated by the user) are then recommended to the user." That approach described in *Linden* is no different from the conventional approaches discussed above. Significantly, that approach described in *Linden* and those conventional approaches do not identify "similar users" based on a set of reference items which are identified by identifying items that have ratings similar to the ratings given to the recommended item. Thus, Applicants respectfully submit that *Linden's* "collaborative filtering" approach for recommending items does not teach or in any way suggest at least "identifying, based on the one or more reference items that have ratings similar to ratings of the particular item that the particular user has not yet rated, one or more other users of the plurality of users that have given ratings to the one or more reference items that are substantially similar to ratings given by the particular user to the one or more reference items", as featured in Claim 7. Since *Linden's* first approach does not satisfy each and every element of Claim 7 in as complete detail as recited in Claim 7, *Linden's* first approach does not anticipate Claim 7.

3. ***Linden's* patented approach does not anticipate the method of Claim 7.**

Linden's patented approach makes recommendations to a particular user based on lists of items that are similar to items of known interest to the particular user. (*Linden*, Abstract). These similar lists are combined into a single list, which is then sorted based and filtered to generate a list of recommended items. However, once the similar item lists are obtained based on the items

of known interest, the approach of *Linden* does not then go on to identify, based the similar item lists, users that rated similar items similarly to how the particular user rated those similar items and then does not further recommend items based on those identified users. Consequently, Applicants respectfully submit that *Linden's* patented approach does not teach or in any way suggest at least the following features of Claim 7 as they as featured in Claim 7:

> identifying, based on the one or more reference items that have ratings similar to ratings of the particular item that the particular user has not yet rated, one or more other users of the plurality of users that have given ratings to the one or more reference items that are substantially similar to ratings given by the particular user to the one or more reference items;
>
> a computer system generating an estimation of how the particular user would rate the particular item based upon ratings for the particular item given to the particular item by the one or more other users.

User ratings may be taken into account in *Linden's* patented approach but not in the manner that user ratings are involved in the method of Claim 7. For example, the set of items of known interest may be identified based on items that the particular user has rated highly. (*Linden*, col. 10, lines 47-63). As another example, multiple similar item lists may each be weighted based on how the particular user rated a corresponding item of interest. (*Linden*, col. 11, lines 4–15). Yet Claim 7 expressly requires generating an estimation of how a particular would rate a particular item that has not yet been rated by the particular user. Indeed, as expressly stated in *Linden* with regard to the patented approach, an "important benefit of the service is that the recommendations are generated without the need for the user, or any other users, to rate items."

4. **Summary**

Therefore, it is respectfully submitted that the rejection of Claim 7 is based on clear error because neither of the two approaches for recommending items described in *Linden* anticipates the method of Claim 7. In particular, neither of the two approaches described in *Linden* teaches or in any way suggests at least "identifying, based on the one or more reference items that have ratings similar to ratings of the particular item that the particular user has not yet rated, one or more other users of the plurality of users that have given ratings to the one or more reference items that are substantially similar to ratings given by the particular user to the one or more reference items", as featured in Claim 7. Indeed, since neither of the two approaches identifies the claimed "one or more other users" in the manner featured in Claim 7 and since the "generating an estimate step" of Claim 7 depends on the identifying "one or more other users" step, *Linden* does not teach or in any way suggest "a computer system generating an estimation of how the particular user would rate the particular item based upon ratings for the particular item given to the particular item by the one or more other users", as featured in Claim 7. Therefore, Claim 7 is patentable over *Linden* because *Linden* does not satisfy each and every feature of Claim 7 in as complete detail as contained in Claim 7.

CLAIMS 8-12 AND 14-33

Claims 8-12 and 14-33 all depend from Claim 7 and include all of the limitations of Claim 7. It is therefore respectfully submitted that Claims 8-12 and 14-33 are patentable over *Linden* for at least the reasons set forth herein with respect to Claim 7. Furthermore, it is respectfully submitted that Claims 8-12 and 14-33 recite additional limitations that independently render them patentable over *Linden*.

CLAIMS 34-39 AND 41-60

Claims 34-39 and 41-60 recite limitations similar to Claims 7-12 and 14-33, except in the context of volatile or non-volatile machine-readable storage media. It is therefore respectfully submitted that Claims 34-39 and 41-60 are patentable over *Linden* for at least the reasons set forth herein with respect to Claims 7-12 and 14-33.

CLAIMS 61-66 AND 68-87

Claims 61-66 and 68-87 recite limitations similar to Claims 7-12 and 14-33, except in the context of apparatuses. It is therefore respectfully submitted that Claims 61-66 and 68-87 are patentable over *Linden* for at least the reasons set forth herein with respect to Claims 7-12 and 14-33.

CLAIMS 110-112

Claims 110-112 depend from independent claims 7, 34, and 61, respectively, and are therefore patentable over *Linden* for at least the same reasons that Claims 7, 34, and 61 are patentable over *Linden*. In addition, Claims 110-112 also recite additional features that are not taught or suggested by *Linden*.

Claim 110 contains the feature of "wherein generating an estimation of how the particular user would rate the particular item based upon ratings for the particular item given by the one or more other users includes **determining a similarity between the ratings given by the one or more other users to the one or more reference items and the ratings given by the particular user to the one or more reference items**" (emphasis added). This feature is described in detail in the Specification (see paragraph [0087]). As disclosed in the Specification, "[t]he degree of similarity between the similar reference users and the particular user may vary based upon a variety of factors including, for example, the number of similar items that both the particular user and the similar reference users have rated and how the particular user and the similar reference

user rated the similar items". This degree of similarity, according to the method recited in Claim 110, forms a basis for the generation of the estimation of how the particular user would rate the particular item. This feature is not taught or suggested by *Linden*.

As discussed above, *Linden* does not teach or suggest the generation of a rating estimation. Therefore, *Linden* also cannot teach how the rating estimation is generated. More specifically, *Linden* does not teach the generation of a rating estimation that includes "determining a similarity between the ratings given by the one or more other users to the one or more reference items and the ratings given by the particular user to the one or more reference items."

Claims 111 and 112 recite limitations similar to 110, except in the contexts of computer-readable media and apparatuses. It is therefore respectfully submitted that Claims 110 and 112 are patentable over *Linden* for at least the reasons set forth herein with respect to Claim 110.

In view of the foregoing, it is respectfully submitted that Claims 7-12, 14-39, 41-66, 68-87, and 110-112 are patentable over *Linden*. Accordingly, reconsideration and withdrawal of the rejection of Claims 7-12, 14-39, 41-66, 68-87, and 110-112 under 35 U.S.C. § 102(e) as being anticipated by *Linden* is respectfully requested.

CONCLUSIONS & MISCELLANEOUS

The Examiner is respectfully requested to contact the undersigned by telephone relating to any issue that would advance examination of the present application.

A petition for extension of time, to the extent necessary to make this reply timely filed, is hereby made. If applicable, a check for the petition for extension of time fee and other applicable fees is enclosed herewith. If any applicable fee is missing or insufficient, throughout the

pendency of this application, the Commissioner is hereby authorized to charge any applicable fees and to credit any overpayments to our Deposit Account No. 50-1302.

Respectfully submitted,

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